Refine Search

Search Results -

Terms	Documents
L7 and nanofiltration	0

Database:

US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Search: L14

Refine Search

Recall Text Clear Interrupt

Search History

DATE: Friday, February 20, 2004 Printable Copy Create Case

Set Name side by side	Query	Hit Count	Set Name result set
	DB=USPT; PLUR=YES; OP=ADJ		
L14	L7 and nanofiltration	0	L14
L13	L11 and nanofiltration	0	L13
L12	L11 and reverse osmosis	1	L12
L11	recovering regenerant and ion exchange	5	L11
L10	recover? regenerant and membrane	0	L10
L9	l1 and regenerant waste recovery	1	L9
L8	L7 and regenerant same membrane	1	L8
L7	L6 and regenerant	16	L7
L6	L5 and reverse osmosis	37	L6
L5	210/670.ccls.	527	L5
L4	l2 and 210/651.ccls.	27	L4
L3	L2 and membrane same ion exchage	0	L3
L2	L1 and reverse osmosis	308	L2
L1	ion exchange and regeneration and salt and membrane	2651	L1

First Hit Fwd Refs

Generate Collection Print

L17: Entry 1 of 5 File: USPT May 23, 2000

DOCUMENT-IDENTIFIER: US 6066257 A
TITLE: Process for the removal and destruction of perchlorate and nitrate from aqueous streams

Brief Summary Text (4):
Perchlorate (ClO.sub.4.sup.-) and nitrate (NO.sub.3.sup.-) anions present in drinking water sources present a serious health hazard to the general public. The perchlorate anions are a result of dissolved perchlorate salts, such as ammonium perchlorate (NH.sub.4 ClO.sub.4), used in the manufacture and reclamation of explosives and solid rocket propellants. Since many perchlorate salts have high solubility in water, the ground water in the vicinity of sites where perchlorate was used is likely to be contaminated with the perchlorate anion. The concentration of dissolved perchlorate in ground water in the vicinity of such sites depends on a number of factors, some of which include the extent of ground contamination, distance from contamination site and access to immediate water table. Typical concentrations of dissolved perchlorate in ground water range from 20-600 parts-per-billion (ppb) near the contaminated areas. While the nitrate issue was identified earlier, the perchlorate problem has only been recently identified in southern California and parts of Nevada in the United States.

Brief Summary Text (7):
Another approach is the use of a chemical salt to react with the dissolved perchlorate to form a perchlorate salt, which is removed by precipitation. Normally, the prior art teaches the use of adding potassium chloride to water to form potassium perchlorate that is precipitated. This approach is feasible where the perchlorate concentration is relatively high (>100 parts-per-million or ppm) and where removal of most, but not all, of the dissolved perchlorate is acceptable. However, it is unlikely to be useful for ground water treatment applications where the perchlorate concentrations are relatively low because the water-solubility (about 1 part in 65 parts water) of potassium perchlorate is high enough to prevent potassium perchlorate to be completely removed from ground water containing less than 1 ppm (1000 ppb) perchlorate.

Detailed Description Text (5):
The microbe can operate in an anoxic or anaerobic environment that facilitates the use of perchlorate for cellular metabolism. The residence time for substantial perchlorate destruction using such a microbe and a favorable nutrient formulation is on the order of about 20 minutes. Thus, for a 2000 gpm feed water stream resulting in a brine effluent stream of 40 gpm or less, the reactor size for treating the brine effluent is expected to be about 800 gallons or less. The brine after perchlorate (and nitrate) destruction is passed through a sulfate removal unit such as a nanofiltration system that can include a solids pre-filter or post-filter. The resulting brine is passed under an ultraviolet (UV) lamp, for example, an Aurora UV manufactured by Calgon Carbon Corporation, that serves as a disinfectant to destroy any active microbes that may be present. The brine is then sent to a regenerant storage tank where adequate amounts of fresh make-up brine is added and re-used as regenerant in the process.

Detailed Description Text (6):
The rinse zone 21 serves to remove the excess brine from the columns before being

sent to the next adsorption zone. The rinse wash effluent is treated by a reverse osmosis system resulting in a pure water stream used as a feed for the rinse zone and a concentrated brine stream that is pumped directly to the regenerant storage tank. Thus the adsorption, regeneration and rinse zones constitute a complete cycle and are continuously operated. The waste streams possibly resulting from the process are the small metabolic waste from the microbes and the sulfate rejection stream, the combination of which is less than or equal to about 0.2% of the total feed water flow.

Freeform Search

Database:
US Pre-Grant Publication Full-Text Database
US Patents Full-Text Database
US OCR Full-Text Database
EPO Abstracts Database
JPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Term: L20 and dead end

Display: 10 **Documents in Display Format:** CIT **Starting with Number** 1

Generate: ○ Hit List ◉ Hit Count ○ Side by Side ○ Image

Search Clear Interrupt

Search History

DATE: Friday, February 20, 2004 Printable Copy Create Case

Set Name side by side	**Query**	**Hit Count**	**Set Name** result set
	DB=USPT; PLUR=YES; OP=ADJ		
L21	L20 and dead end	4	L21
L20	L19 and reverse osmosis	40	L20
L19	L18 and membrane and cleaning and flushing	67	L19
L18	210/636.ccls.	330	L18
L17	L15 and treating same regenerant	5	L17
L16	L15 and regenerant recovery	0	L16
L15	reverse osmosis same regenerant and salt	29	L15
L14	L7 and nanofiltration	0	L14
L13	L11 and nanofiltration	0	L13
L12	L11 and reverse osmosis	1	L12
L11	recovering regenerant and ion exchange	5	L11
L10	recover? regenerant and membrane	0	L10
L9	l1 and regenerant waste recovery	1	L9
L8	L7 and regenerant same membrane	1	L8
L7	L6 and regenerant	16	L7
L6	L5 and reverse osmosis	37	L6

L5	210/670.ccls.	527	L5
L4	l2 and 210/651.ccls.	27	L4
L3	L2 and membrane same ion exchage	0	L3
L2	L1 and reverse osmosis	308	L2
L1	ion exchange and regeneration and salt and membrane	2651	L1

END OF SEARCH HISTORY

EAST - [default.wsp:1]

File View Edit Tools Window Help

- Drafts
- Pending
- Active
  - L1: (1373) (210/170).CCLS.
  - L2: (134) l1 and membrane
  - L3: (371516) l2 and spiral wound
  - L4: (10) l2 and spiral
  - L5: (2013) 210/651
  - L6: (554) 210/333.01
  - L7: (475) 210/333.1
- Failed
  - (0) l2 with spiral wound
- Saved
- Favorites
- Tagged (0)
- UDC
- Queue
- Trash

Browse Queue Clear

DBs USPAT; EPO; DERWENT

Plurals

Default operator: OR

Highlight all hit terms initially

210/333.1

BRS form IS&R form Image Text HTML

	U	1	Document ID	Issue Date	Pages	Title	Current OR	Current XRef
1			US 6682652 B2	20040127	39	Apparatus for withdrawing permeate using an immersed vertical skein of h	210/195.2	210/257.2; 210/321.8;
2			US 6634372 B2	20031021	9	High efficiency cleaning of rotating filter media	134/148	134/152; 134/153;
3			US 6627082 B2	20030930	17	System and method for withdrawing permeate through a filter and for clean	210/636	210/195.2; 210/321.69;
4			US 6607660 B2	20030819	10	Liquid filtration device with backwashing feature	210/108	210/323.2; 210/333.1;
5			US 6596165 B2	20030722	10	Filtering apparatus	210/323.2	210/333.1; 210/411;
6			US 6592758 B2	20030715	18	Filter element for a liquid-state process stream	210/232	210/333.1; 210/411;
7			US 6578516 B1	20030617	6	Device and method for milking animals, and a contamination meter	119/14.18	119/14.32; 210/371;
8			US 6543624 B1	20030408	9	Back-washable filter for liquids	210/411	210/333.1; 210/393;
9			US 6521126 B2	20030218	8	Pipe gallery for water filtration systems	210/277	210/284
10			US 6514323 B1	20030204	13	Purification assemblies and purification methods	95/273	55/502; 55/503;
11			US 6491818 B2	20021210	20	Suction strainer with an internal core tube	210/315	210/337; 210/338;

Hits Details HTML

Start Microsoft Office EAST - [defau...

EAST - [default.wsp:1]

File View Edit Tools Window Help

- Drafts
- Pending
- Active
  - L1: (414) (210/257.2).CCLS.
  - L2: (605) (210/650).CCLS.
  - L3: (336) (210/636).CCLS.
  - L4: (179) (210/321.83).CCLS.
  - L5: (353) (210/321.8).CCLS.
- Failed
- Saved
- Favorites
- Tagged (0)
- UDC
- Queue
- Trash

Browse Queue Clear

DBs USPAT; EPO; DERWENT

Highlight all hit terms initially

210/321.8

BRS form IS&R form Image Text HTML

	U	1	Document ID	Issue Date	Pages	Title	Current OR	Current XRef
1	☐	☐	US 6685832 B2	20040203	31	Method of potting hollow fiber membranes	210/321.8	156/242; 156/245;
2	☐	☐	US 6682652 B2	20040127	39	Apparatus for withdrawing permeate using an immersed vertical skein of h	210/195.2	210/257.2; 210/321.8;
3	☐	☐	US 6667172 B2	20031223	21	Cell and tissue culture modeling device and apparatus and method of	435/297.4	210/321.8; 359/398;
4	☐	☐	US 6663745 B1	20031216	17	Method for manufacturing hollow fiber membranes	156/293	156/294; 156/296;
5	☐	☐	US 6656356 B2	20031202	11	Aerated immersed membrane system	210/321.8	210/321.69; 210/321.88;
6	☐	☐	US 6649058 B1	20031118	16	Hollow membranes with capillary tubes, fluid treatment modules that us	210/321.75	210/321.79; 210/321.8;
7	☐	☐	US 6645381 B2	20031111	6	Modular assembly for hollow membrane fiber cartridges	210/321.78	210/321.79; 210/321.8;
8	☐	☐	US 6641731 B1	20031104	11	Filter device	210/321.79	210/321.8; 210/456;
9	☐	☐	US 6635179 B1	20031021	9	Sterile fluid filtration cartridge and method for using same	210/650	210/321.8; 210/321.81;
10	☐	☐	US 6630069 B2	20031007	13	Hollow fiber membrane module of immersing type	210/321.69	210/321.79; 210/321.8;
11	☐	☐	US 6623638 B2	20030923	11	Hemodialyzer having improved	210/321.79	210/321.6;

Hits Details HTML

Start Microsoft Office eDAN Version 1 EAST - [defau...

L5: Entry 4 of 5 File: USPT Mar 5, 2002

DOCUMENT-IDENTIFIER: US 6352641 B1
TITLE: Wound pocket module

Abstract Text (1):
An improvement to a spiral wound filtration membrane is the provision of a fluid-permeable protective sheath around the inner spacer of the membrane pocket.

Brief Summary Text (2):
Spiral wound filter modules are useful for filtration processes in the food and beverage industries, in pharmaceutical and chemical manufacturing plants as well as in laboratories. They also are used in environmental protection applications and in the bio-tech industries. In these applications the emphasis is on the separation of fluid or particle components such as proteins, microorganisms, cells and the like, as well as in prevention of contamination of the fluids that are filtered.

Brief Summary Text (3):
Such spiral wound modules are typically enclosed in a housing provided with fluid connections. The winding consists of at least one membrane envelope or pocket with an inner spacer and at least one outer spacer arranged so as to form fluid channels for the flow of permeate, feed and/or retentate. These components are wound in spiral fashion about a fluid-permeable core tube so that at least one membrane envelope or pocket is in fluid communication with the core tube by means of an inner spacer and holes in the core tube. See, for example, U.S. Pat. No. 5,275,726. Depending upon the arrangement of the fluid connections, such wound modules can be operated in either a cross-flow or dead-end filtration mode. The winding can also be from cut sections of flat membranes with interposed, spirally wound, laminar spacers, wherein the spacers also form channels for permeate, feed and/or retentate. Fluid channels are fabricated by sealing corresponding, neighboring flat membranes fluid-tight to membrane pockets in their side zones.

Brief Summary Text (4):
In the operation of such spiral wound modules, the membranes are subjected to strong mechanical forces. Mechanical stresses appear predominately in the areas of folded ends of the membrane pockets, particularly in the closed area of the front end of the membrane pocket, which is proximal to the core tube. In this area, membrane defects often occur, rendering the entire spiral wound module unusable. Damage to the membranes in this area also occurs by virtue of flexing arising from the membranes being pressed into and out of open spaces found in the interstices of reinforcing fabrics, textiles, or lattice work.

Brief Summary Text (6):
Another approach is disclosed in EP 0 486 190 A2, which discloses the application of a thick film of a thermoplastic material to the outer area of the folded end of the membrane pocket of an integrally reinforced membrane; the application of heat and pressure causes the thick film to be bound both to the reinforcement and to the membrane. But such a reinforcement technique has a considerable drawback in that the pores of the membrane resist the passage of fluid, thereby diminishing the filtration efficiency of the membrane and as a result the overall filtration capacity of the spiral wound module. Furthermore, in the case of hydrophilic membranes, hydrophobicity develops in the edges of the area of the hot melt of the

thermoplastic material, with the result that the module cannot be tested for integrity when pressurized by test gases.

Brief Summary Text (8):
Thus, it is a principal object of the present invention to provide a spiral wound module in which the membranes of the membrane pockets of the winding are sufficiently protected against mechanical stresses that the module provides high filtration capacity and filtration safety.

Brief Summary Text (10):
The foregoing object is achieved by the provision of a spiral wound module wherein the inner spacer inside the membrane envelope or pocket is covered over by a flat, fluid-permeable protective material. This protective covering preferably extends over the entire length of the membrane pocket including the portion of the membrane pocket that is proximal to the core tube.

Drawing Description Text (2):
FIG. 1 is a cross-sectional schematic of a spiral wound membrane module comprising a series of membrane pockets would around a core tube.

Drawing Description Text (3):
FIG. 2 is an enlarged cross-sectional schematic of the inventive pocket portion of the spiral wound membrane module of FIG. 1.

Detailed Description Text (7):
When materials are employed for the protective sheath 10 which have a lower filtration resistance than do the membranes of the membrane pockets, the filtration capacity of the spiral wound module is not even slightly diminished. If the protective sheath 10 does not extend over the entire length of the spacer 6, then the danger exists that the protective sheath can rupture during either manufacture or operation of the module. In order to avoid this, in a preferred embodiment of the invention, protective sheath 10 should be at least tack-welded to inner spacer 6, readily accomplished by the application of heat, especially if nonwoven fibers are used for the protective sheath 10 and woven thermoplastic fibers are used as the inner spacer 6. Such an affixing of protective sheath 10 to spacer 6 provides the advantage that those surfaces of the membrane which are filtration-active are not damaged and thus not diminished in filtration capacity. That was not the case, however, when such protective material was affixed to the membrane 5 instead of to inner spacer 6. Asymmetric membranes, which are most commonly used in spiral wound modules, are especially sensitive. Such asymmetric membranes comprise a permselective small-pore "skinned" layer on larger pore support layer. The fixation of the protective materials to the "skinned" side of membranes of this type easily leads to a separation of the permselective skin layer from the support layer of the membrane, rendering it unusable.

Detailed Description Text (8):
Because the present invention avoids any impact on the membrane that would otherwise be caused by temperature or by hot melts, spiral wound modules of hydrophilic membranes can be readily tested for integrity by the use of pressurized gas. Such integrity tests are used to test burst pressures, rates of diffusion, and pressure retaining capacity. This advantage is of considerable importance in sensitive applications, especially where sterile filtration or the recovery of valuable materials are concerned.

Detailed Description Text (9):
For the spiral wound module of the present invention, membranes of organic polymers are employed, which are particularly well-adapted for reverse osmosis, pervaporation, ultrafiltration, microfiltration and membrane chromatography. Because of their mechanical sensitivity, the membranes are preferably used in the form of composite, textile-reinforced membranes. In such applications laminated

membranes, especially membranes of nonwoven fibers and in particular nonwovens comprised of core-mantel fibers, are particularly suitable. Where such textile-reinforced membranes are used, the membrane side 5 is proximal to spacer 6.

Current US Cross Reference Classification (1):
210/321.74

CLAIMS:

1. In a spiral wound filtration module comprising a winding of at least one membrane pocket comprising a filtration membrane and an inner spacer and at least one outer spacer with said spacers forming fluid channels for the flow of feed, permeate and retentate, said at least one membrane pocket being wound around a core tube and in fluid communication with said core tube, the improvement comprising a flat fluid-permeable protective sheath around the end of and along the length of the inner spacer of said at least one membrane pocket.

First Hit Fwd Refs

Generate Collection Print

L9: Entry 4 of 6 File: USPT Feb 13, 1996

DOCUMENT-IDENTIFIER: US 5490926 A
TITLE: Spiral-wound filtration cartridge with longitudinal bypass feature

Brief Summary Text (5):
Spiral-wound filtration cartridges ("spiral cartridges" for short) employ the tangential-flow principle. These cartridges are known in the art and may be exemplified by U.S. Pat. No. 5,114,582, the disclosure of which is incorporated herein by reference. In such cartridges, a "sandwich" of membrane layers (membrane sheet-permeate carrier sheet-membrane sheet) is wrapped spirally around a porous permeate collection tube. The sandwiches are separated by spacers which allow for retentate flow channels. A cartridge may contain several such "sandwiches" depending on its size. The membrane edges are bonded so that the process fluid cannot enter the channel where permeate is collected. The spiral-wound assembly is then inserted into a cylindrical housing, and fixed in place. Process fluid fittings may be then be attached. As process fluid flows is axially down the retentate flow channels, permeate moves spirally inside the membrane sandwich to the central collection tube, then exits through a header assembly. This arrangement provides efficient filtration by cross-tangential flow over a large membrane area. Spiral-wound filtration cartridges are used typically for, e.g., gas separation, reverse osmosis, nanofiltration, ultrafiltration, and microfiltration.

Current US Original Classification (1):
210/321.74

First Hit Fwd Refs
End of Result Set

Generate Collection Print

L9: Entry 6 of 6 File: USPT Sep 15, 1992

DOCUMENT-IDENTIFIER: US 5147541 A
TITLE: Spiral filtration module with strengthened membrane leaves and method of constructing same

Brief Summary Text (3):
The term "ultrafiltration" as used in the present application is intended to encompass microfiltration, nanofiltration, ultrafiltration and reverse osmosis and gas separation. A typical ultrafiltration device comprises a plurality of spiral wound filtration modules through which a fluid to be filtered passes. Such a module is made by winding one or more membrane leaves and permeate envelopes around a permeate tube. The membrane leaves are separated by feed spacer screens which are of a relatively large mesh size to accommodate fluid flow. The permeate passes through the membrane surface of the membrane leaves and is directed to the permeate tube by a permeate carrier sheet. Some type of external restraining means such as a hard shell, straps or a bypass screen, or a combination thereof may be used to hold the spirally wound leaves in tight formation around the tube. The spiral module is then loaded into a housing or pressure vessel which is operated at a slight pressure drop across the module as the fluid being filtered flows through. Concentrate is removed from one end of the module and permeate is removed from the permeate tube

Current US Original Classification (1):
210/321.74